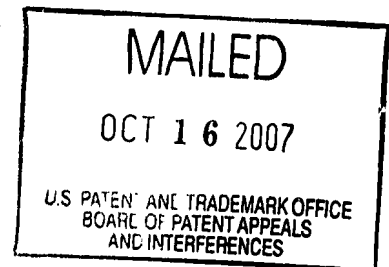


1 RECORD OF ORAL HEARING
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3 UNITED STATES PATENT AND TRADEMARK OFFICE
4

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6 BEFORE THE BOARD OF PATENT APPEALS
7 AND INTERFERENCES
8

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10 *Ex parte* GEOFFREY S.M. HEDRICK
11

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13 Appeal 2007-2519
14 Application 10/616,208
15 Technology Center 2100
16



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18 Oral Hearing Held: August 8, 2007
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21 Before ANITA PELLMAN GROSS, JOSEPH RUGGIERO, and
22 ST. JOHN COURTENAY, III, *Administrative Patent Judges*
23

24 ON BEHALF OF THE APPELLANT:
25

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34 The above-entitled matter came on for hearing on Wednesday,
35 September 12, 2007, commencing at 10:05 a.m., at The U.S. Patent and
36 Trademark Office, 600 Dulany Street, Alexandria, Virginia, before Laurel P.
37 Platt, RDR, CCR No. 0313203, Notary Public.
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1 THE CLERK: Appeal number 2007-2519, and the attorney is Lance
2 Lieberman.

3 MR. LIEBERMAN: Lance Lieberman for Geoffrey Hedrick.

4 I don't want to waste your time going over my brief. What I thought I
5 would do is discuss briefly what the invention, the claims invention is, talk
6 about the reference, because I think the primary misunderstanding here with
7 the examiner's position is what the reference actually teaches and what it
8 doesn't teach.

9 As I said in my brief, in our brief, the appellant's claimed invention is
10 directed to a system and a method for facilitating direct user entry of a
11 manually-adjustable data setting that is normally imaged in a predetermined
12 size by imaging displayed in an aircraft cockpit.

13 Today, in aircraft such as those and aircraft displays such as that to
14 which the present invention and the reference is directed, flat-panel displays
15 have -- large flat-panel displays have replaced the various steam gauges in
16 instrument flight, which is probably the most difficult thing you can learn to
17 do when you fly.

18 It's important your eyes are constantly moving around all the
19 instruments because failure to -- if you focus too intently on one instrument,
20 and you don't constantly focus on all of the instruments, you can very
21 quickly get in a situation, a John Kennedy situation, where suddenly your
22 attitude is one wing way down, and you plunge into the ground.

23 On these new flat-panel displays there's a huge amount of information
24 being projected in a single display, which is typically 12 by 9 inches or
25 something along that size.

26 Because of that, when the pilot is called on to reset different
27 parameters or to do different things during flight that are not directly related

1 to flying the airplane, the attention must be focused on the task at hand and
2 taken away from scanning the instruments to be sure it's pertaining to
3 altitude and attitude and all the other things you need to do.

4 Many of the things that you are required to set during flight are things
5 which come up continuously. Local barometric pressure, which I used in the
6 application, for instance, is a very common one. It's reset in every hour of
7 flight at altitudes from below 18,000 feet. You probably reset that a dozen,
8 maybe 18 times, as you pass from controller to controller, so the local
9 altimeter setting has to be reset.

10 A mistake in setting this -- and it's very easy to make that kind of
11 mistake -- a one-inch mistake in attitude from 29.92 to 28.92 is a thousand
12 foot difference. It puts you in the path of approaching aircraft rather than
13 where you should be.

14 On steam gauges, on the old steam gauges it's very simple. You twist
15 a little knob, a little window on the altitude indicator, and it shows you --
16 you watch it go up and down as you control in the window where you are.
17 But on the new flat-panel displays, you're either punching into a key pad or
18 you're rotating a little knob and you're watching a number, a very small
19 number on a huge display change. It's very easy to make a mistake.

20 Other things you're asked to do: You need to constantly change
21 frequencies with new controllers. Very easy and very common -- I'm a pilot
22 myself -- very common to put the wrong frequency in. You go back to the
23 controller and say what was that frequency again.

24 You are doing so many things at the same time. There's so many
25 things you have to do.

26 They're asking you at the same time to get the weather of the
27 approaching airports. You have to change your flight plan because suddenly

1 aircraft control wants you to detour around some other aircraft. So you are
2 doing all these things at the same time.

3 JUDGE COURTENAY: Is there any situation that you are aware of
4 where a pilot would implement a stylus? I notice that you have that
5 disclosure in your first paragraph --

6 MR. LIEBERMAN: Not presently. It's something the client brought
7 up as a possible thing for the future, but I've never seen it, and I'd be
8 surprised. It's just a need to have to either pick up a stylus.

9 I mean it's one thing -- there are displays where you hit your finger on
10 something and choose something from a menu which is a touch-sensitive
11 display. But to have to use a stylus when you are doing all these other things
12 at the same time is kind of crazy.

13 JUDGE COURTENAY: So to your knowledge, pilots do not use
14 styluses.

15 MR. LIEBERMAN: Not to my knowledge. I'd be surprised if
16 something like that would be really done because in a single aircraft IFR,
17 there's too much workload.

18 I'm constantly dropping pens in the cockpit anyway and not being able
19 to write down something the controller gives me, so it's enough to find a pen
20 that I drop down. You usually keep it wrapped around your neck on a string
21 or something so you can pick it up right away.

22 JUDGE COURTENAY: So the only disclosure that you are aware of
23 a pilot using a stylus to implement --

24 MR. LIEBERMAN: As a suggestion of one of the ways that you
25 could implement it, that's correct.

26 Turning to the claims here, the claims are very specific. The claims
27 are drawn to one of these types of controls where it's a control for adjusting

1 a manually manipulable something to -- a manually-adjustable data setting
2 which is manipulated by a control. It's a manually- manipulated control
3 which somehow you adjust some kind of a data setting, which is normally an
4 image on the display.

5 The idea is whenever you touch this thing, whenever you start to
6 make that change, the thing pops up into a window, and you can't possibly
7 miss it. And that's important because even though you know where it is,
8 having to concentrate on that small part of the display takes your attention
9 away from all the other things going on at the same time.

10 So two things happen here. One, we have this control which adjusts
11 the manually-adjustable data setting which is displayed in a single way.

12 When you touch it, when you start to move it, it opens up. The
13 window enlarges. You see it as you are adjusting it. And when you take
14 your fingers away from the control, when you stop adjusting it, the thing
15 returns to its normal size. That's very important because you don't want it
16 sitting there in front of all your other instrumentations.

17 One of the reasons we talk about that it doesn't block the entire view
18 behind it because you still have to be able to watch what else is going on at
19 the same time in the various instruments which are depicted on the display.

20 There's two important things here. One is that as you manipulate the
21 control, the thing enlarges; and when you stop manipulating the control, it
22 reduces in size to its normal size again. That's very important.

23 Now, the examiner cites this Feyereisen reference which shows one of
24 these flat-panel displays. This is the kind of display we are talking about.

25 What Feyereisen says is that gee, you know, it's directed to a problem
26 which is related but not the same. In Feyereisen, Feyereisen says, look,
27 we've got these big displays and all this information here, and the pilot's

1 attention gets tunneled or directed to one thing too often, and what do we do
2 then?

3 Because if you lose attention -- you've got all these things going on --
4 you start concentrating on one thing and, gee, well, that's interesting. What's
5 going on over here? And suddenly your attitude is like this and you are
6 headed down in a different direction or your altitude is changing, and you've
7 got planes coming the other direction.

8 What they say is, well, we have an algorithm. We are going to figure
9 out what kind of flights you're in. We're going to figure out whether you're
10 in cruise mode, which is basically steady-state level flight from one point to
11 another in the air system, or maybe you are in a climb or maybe you are in
12 ground operations.

13 We are going to figure out where you are by all the inputs that we get
14 from all the data which is on the aircraft bus which is generated by all the
15 various sensors around the aircraft, and we are going to emphasize different
16 portions of the display. They do say that one way to emphasize is by
17 enlarging or changing the font or the color somehow.

18 JUDGE COURTENAY: Your position is that's done automatically.

19 MR. LIEBERMAN: It's not only done automatically, but there's no
20 way to return it back when you stop doing something.

21 The examiner's position is, well, you know, to start a climb, for
22 example, in an aircraft you have got to be doing something. The pilot must
23 be doing something; and therefore, they must be operating some kind of a
24 control for doing the climb. In a climb, it's probably going to show you the
25 altitudes. It doesn't say that, but it's probably going to somehow emphasize
26 the altitude indicator.

27

1 Okay. Now you are in a steady state climb, 500 feet per minute. You
2 ramp up your power, your manifold pressure depending on how the aircraft
3 is constructed, and the aircraft starts to climb. Okay. Well, aren't you
4 enlarging that in response? Yes, you are. But that's not a manually-operable
5 setting for changing a particular thing on display.

6 But more importantly, when you ramp it up to 500 feet, you're
7 ramping up to a particular power setting, and then you stop. The aircraft
8 continues to climb at 500 feet per second.

9 That's how an airplane works. You don't constantly keep ramping it
10 up and keep climbing and climbing. You ramp it to a particular place and
11 reach a steady-state position. The aircraft climbs until you want to stop.

12 According to our invention, if Feyereisen is operated in accordance
13 with our invention, while you're watching altitude, suddenly once you take
14 your hands off the power level because you've adjusted it to where you
15 wanted to climb, the thing goes back to where it was.

16 Of course, Feyereisen says as long as you are in a climb -- I'm going
17 to emphasize. The only reason I'm going to de-emphasize is now you enter
18 a different state of operation, a different phase of operation. Maybe you
19 reach a steady-state operation. Maybe you reach a target altitude. Maybe I
20 want to highlight the target altitude.

21 So it's a different concept of an invention. It's not what we are doing.
22 It's kind of like -- and it's not a great analogy, but the best I could come up
23 with was if I'm operating a motor vehicle, and I have my speed shown on the
24 screen, shown on the dashboard, and -- yeah, if I push my foot down on the
25 gas, that's going to increase that.

26 But what the examiner says is -- wait a minute. He says, well, in
27 Feyereisen there is a TCAS, a traffic collision avoidance system, which

1 basically is a system that throws up on the display aircraft around you and
2 warns you in different modes of operation.

3 You can have it off, or you can say the transponder says, hey, here is
4 different aircraft around you. And then there's a super mode which says here
5 is aircraft around you. I'm going to tell the TCAS and the other plane he
6 should dive, and you should climb, so that the two of you will move away
7 from each other.

8 So these TCAS systems are fairly common. Typically, they're in
9 separate devices. So now you've got all these instruments you're looking at,
10 and you've got to keep looking at the TCAS system.

11 So what Feyereisen says is let's take the TCAS stuff, which is still
12 driven by the separate thing, and let's put the bogie, essentially, on my big
13 flat-panel display so you can see them.

14 The TCAS system has a button, button 46, and it says okay, you can
15 change to a different operating mode, whether it's off or you show some of
16 the aircraft or you tell it how to avoid the aircraft as well.

17 And I'm going to put a little tiny text box on the big display showing
18 you what mode you are in. Okay?

19 So that's kind of like me saying, well, in my car when I put it into
20 drive and I put my foot on the gas, I'm going to increase speed. I'm going to
21 show my speed on the dashboard is going to increase.

22 Well, so that button is kind of like me putting the car into park or
23 putting it into drive. That's so far removed from what you are doing. That's
24 not a manually-operated control for adjusting the data setting.

25 JUDGE COURTENAY: So your position is this control is associated
26 with the TCAS and has no nexus with this.

27 MR. LIEBERMAN: Correct.

1 JUDGE COURTENAY: The other disclosure we have of the phase of
2 the flight is basically determining the enlargement of a particular indicator --

3 MR. LIEBERMAN: Correct, and more importantly, bringing it back
4 again to regular condition when you stop fiddling with it.

5 JUDGE COURTENAY: We understand your position clearly.
6 Would you address the secondary reference?

7 MR. LIEBERMAN: Sure.

8 JUDGE COURTENAY: Could you particularly address the issue of
9 hindsight in light of KSR and the secondary reference.

10 MR. LIEBERMAN: Well, Amro is a PDA. All it says is -- it's an
11 example of many such references -- a PDA in which you want to enter data
12 with a stylus.

13 It's true that I don't know anything with an aircraft, but we did say in
14 the application you could use a stylus for entering data. But in a PDA,
15 obviously you've got a very small screen, and you want to be able to enter
16 data, and the part where you enter data is small, so you tap on the screen and
17 open the window up. You enter the data, and you tap on it again, and it goes
18 away.

19 It's not sensing that you no longer do anything to reduce the size of the
20 display. All it's actually doing is tell me when you want to resize the
21 display.

22 That's not what this invention is. That's not what the claimed
23 invention is. Amro was directed to a different purpose. Amro is directed to
24 a similar purpose as our invention because our invention is directed to
25 facilitating data entry, essentially, in a system.

26 But Feyereisen is directed to reducing pilot workload, as the
27 Feyereisen reference says, reducing pilot workload from IFR workload,

1 which is instrument workload where you don't have any visual cues -- you're
2 just operating on the instruments -- to visual workload where basically you
3 are flying by the visual cues. You're looking at the instruments only once in
4 a while.

5 In fact, when you first learn to fly, visually the worst thing you do is
6 constantly look at the instruments because you look at what's outside. That's
7 a very easy way to fly and gives you a good way of doing it.

8 So, the two of them are not -- this is a classic case of hindsight in
9 construction. We are pulling references from different things here, none of
10 which really focus on what we are doing, but even with a combination
11 doesn't result in it; but in these references we are kind of building a
12 combination based on what the invention says here rather than what the
13 person with skill would say.

14 Do I learn anything from Amro that I could actually apply to
15 Feyereisen to fundamentally change what it does, and I don't believe that
16 you can. I don't think it makes any common sense to do that.

17 JUDGE COURTENAY: What about the argument that the
18 combination might be familiar elements which are combined using known
19 methods to realize a predictable result? Would you respond to that?

20 MR. LIEBERMAN: I respond to that by saying the result, which has
21 to be defined in terms of the applicant's invention, the appellant's invention,
22 is not the result that's provided by either of the references. Amro doesn't --
23 and neither reference shows, for example, closing the window or reducing
24 the size of the window in response to a cessation, sensing a cessation of the
25 user's manipulation.

1 JUDGE COURTENAY: The secondary reference requires an act of
2 intervention by the user to basically close the window and return it to its
3 original size.

4 MR. LIEBERMAN: That's correct.

5 JUDGE COURTENAY: Your invention requires a cessation of
6 control.

7 MR. LIEBERMAN: Right. It senses -- it operates based on what the
8 user is actually doing. It senses the user's actions rather than a context or
9 rather than waiting for another --

10 JUDGE COURTENAY: Can you point that out in your claim?

11 MR. LIEBERMAN: Okay. In claim 1, the last paragraph, reducing
12 the enlarged image of the data setting on the display to the predetermined
13 size when it senses manipulation of the control determines to have ceased.

14 JUDGE COURTENAY: Okay.

15 MR. LIEBERMAN: Thank you.

16 JUDGE COURTENAY: Thank you very much.

17 (Whereupon, at 10:20 a.m. the proceedings were concluded.)
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